WCA Shiloh Landfill, LLC
40 Estes Plant Road
Piedmont, SC 29673

Phone: 864-845-8355
Toll Free: 877-610-2700
Fax: 864-845-8354

June 26, 2008

North Carolina Department of Environmental and Natural Resources
Division of Waste Management
Solid Waste Section
512 North Salisbury Street
Raleigh, North Carolina 27604

Scanned by	Date	Doc ID #
	7/10/08	5045

RE: Material Recovery LLC
Permit 92-31
Surety Bond for Closure and Post Closure

Please find attached a Surety Bond for the above captioned facility located in Wake County, North Carolina in the amount of $1,851,809.00 in favor of the North Carolina Department of Environmental and Natural Resources. This bond is for the closure and post closure of this facility.

The closure estimate is based on 19 acres of open Construction and Demolition Debris Landfill area, and a 30 year post-closure period. The estimate is based on third-party costs to perform the necessary work. A worksheet is attached showing the cost basis of this estimate. A copy of the closure and post-closure plan for the landfill is also attached.

If you have any question, please call me at 954 415-7230.

Sincerely,

Nick Marotta
Regional Engineer

attachments

RECEIVED
JUN 30 2008
SOLID WASTE

Material Recovery, LLC

Closure Post Closure for Bond
Based on largest open area

Closure

Largest Open Area in Acres		19	Quantity	Unit Price	Cost	
Mob/Demob	LS		1.0	$25,000	$25,000	
Topsoil 2 ft	CY		61306.7	$3.25	$199,247	
Clay Cap 1.5 ft	CY		0.0	$7.00	$0	
40 mil HDPE	SF		827640.0	$0.35	$289,674	
Geocomposite single sided	SF		827640.0	$0.45	$372,438	
Seed & Mulch	AC		19.0	$1,300	$24,700	
CQA	AC		19.0	$2,500	$47,500	
					$958,559	**2008 Closure Estimate for Bond**

No gas work since site is not NSPS

Post Closure

Site Inspections					
Annual Facility Inspection	LS	1.0	$1,500	$1,500	
Annual Report	LS	1.0	$1,200	$1,200	
Monthly Inspections	EA	12.0	$200	$2,400	
Subtotal				$5,100	
Land Surface Care					
Mowing	AC	29.0	$75	$2,175	once per year entire property
Erosion Damage Repair	AC	5.0	$600	$3,000	
Subtotal				$5,175	
Maintenance					
Sed Basin Cleaning	LS	0.5	$6,000	$3,000	every other year
Subtotal				$3,000	
Environmental Monitoring					
GW & Surface Water Monitoring	LS	2.0	$7,500.00	$15,000	
Methane Probe Monitor	LS	1.0	$1,500	$1,500	
	LS				
Subtotal				$16,500	
		total for one year		$29,775	
		30 year total		**$893,250**	**Post Closure 30 yrs**
				$1,851,809	**Total Closure Post Closure**

Facility Name: Material Recovery, LLC
Facility Identification Number: 92-31

INCREASE RIDER TO SURETY BOND

PURPOSE: INCREASE

To be attached to Bond Number 300521 issued by Ohio Indemnity Company, as Surety in the amount of Four Hundred Twenty Three Thousand Six Hundred and 00/100 Dollars ($423,600.00), on behalf of Material Recovery, LLC, in favor of the North Carolina Department of Environment and Natural Resources Division of Waste Management.

In consideration of the premium charged for the attached bond, it is mutually understood and agreed by the Principal and the Surety that the bond shall be modified to read as follows: The above said bond amount shall be One Million Eight Hundred Fifty One Thousand Eight Hundred Nine and 00/100 Dollars ($1,851,809.00), effective the 16th day of June 2008.

All other items, limitations and conditions of said bond except as herein expressly modified shall remain unchanged.

Signed, sealed and dated this 18th day of June 2008.

Principal: Material Recovery, LLC

By: _____

Surety: Ohio Indemnity Company

By: _____
Nicole Skedel, Attorney-In-Fact

OHIO INDEMNITY COMPANY
Columbus, Ohio 43215

PRINCIPAL Material Recovery, LLC EFFECTIVE DATE June 16, 2008

CONTRACT AMOUNT _____ AMOUNT OF BOND $ 1,851,809.00

DOCUMENT NO. A1488 POWER NO. 300521

KNOW ALL MEN BY THESE PRESENTS, that Ohio Indemnity Company, a corporation organized and existing under the laws of the State of Ohio with its principal office at 250 East Broad Street, 10th Floor, Columbus Ohio 43215, by and through the undersigned, its President, does hereby nominate, constitute and appoint Kathleen P. Price, Patricia A. Temple, Nicole Skedel, Kathy Goe, Julie Bowers, Maria Jackson and Daniel J. Clark as its true and lawful Attorneys-in-Fact to make, execute, attest, seal, acknowledge and deliver for and on its behalf, as Surety, and as its act and deed, where required, any and all bonds, undertakings, recognizances and written obligations in the nature thereof, PROVIDED, however, that the obligation of the Company under this Power of Attorney shall not exceed Four Million Dollars ($4,000,000).

IN WITNESS WHEREOF, Ohio Indemnity Company has caused its corporate seal to be affixed hereunto, and these presents to be signed by its duly authorized officer this 16th day of January, 2007.

(Corporate Seal)

OHIO INDEMNITY COMPANY

By: _____
John S. Sokol, President

State of Ohio
County of Franklin

On this 16th day of January, 2007, before the subscriber, a Notary Public in and for this County and State, personally appeared John S. Sokol, to me personally known to be the individual and officer described herein, and who executed the preceding instrument and acknowledged the execution of the same and being by me duly sworn, deposed and said that he is the President of Ohio Indemnity Company, and that the seal affixed to the preceding instrument is the corporate seal of said corporation, and the said corporate seal and signature as said officer were duly affixed and subscribed to the said instrument by the authority and direction of said corporation.

NOTARIAL SEAL STATE OF OHIO

OFFICIAL SEAL
SHERRY E. BIXLER
NOTARY PUBLIC, STATE OF OHIO
RECORDED IN PICKAWAY COUNTY
MY COMMISSION EXPIRES
01-06-10

_____
Notary Public

Commission expires: 1/6/10

I, the undersigned, Secretary of Ohio Indemnity Company, a stock corporation of the State of Ohio, do hereby certify that the foregoing Power of Attorney remains in full force.

Signed and sealed this 18th day of June, 2008.

_____
Matthew C. Nolan, Secretary

Any reproduction or facsimile of this form is void and invalid.

OHIO INDEMNITY COMPANY

OHIO INDEMNITY COMPANY
Certificate
2007

The following financial information was excerpted from the Statutory Annual Statement filed by the Ohio Indemnity Company with the Ohio Department of Insurance March 1, 2008:

STATEMENT OF INCOME

Direct Written Premium	72,496,435
Reinsurance Assumed	4,615,150
Reinsurance Ceded	(31,329,370)
Net Written Premium	45,782,215
Change In Unearned	1,191,043
Net Earned Premium	46,973,258
Losses and LAE Incurred	25,815,599
Other Underwriting Expenses	15,946,768
Underwriting Gain	5,210,891
Net Investment Gain	2,968,005
Other Income	457,648
Income Before Federal Income Tax	8,636,544
Federal Income Tax	1,967,145
Net Income	6,669,399

BALANCE SHEET

Assets	
Cash and Invested Assets	100,059,414
Accrued Investment Income	1,098,214
Uncollected Premium and Agents' Balances	7,021,510
Reinsurance Recoverable	1,032,033
Net Deferred Tax Asset	1,156,367
Other Assets	397,040
Total Assets	110,764,578
Liabilites and Surplus	
Loss and LAE Reserves	13,958,457
Reinsurance Payable	688,696
Commission Payable	2,188,849
Unearned Premium	26,369,732
Other Liabilities	22,493,805
Total Liabilities	65,699,539
Surplus	45,065,039
Total Liabilities and Surplus	110,764,578

I hereby certify that the above information is that contained in the Statutory Annual Statement filed by Ohio Indemnity Company with the Ohio Department of Insurance for the year ending December 31, 2007.

Matthew C. Nolan, CFO

250 East Broad Street
Tenth Floor
Columbus, OH 43215-3708
(614) 228-2800 • (800) 628-8581
www.ohioindemnity.com

8.0 CLOSURE AND POST-CLOSURE (15A NCAC 13B .0543)

8.1 Summary of Regulatory Requirements

8.1.1 Final Cap

The final cap design for Phase 2 shall conform to the minimum requirements of the Solid Waste Rules, i.e., the compacted soil barrier layer shall exhibit a thickness of 18 inches and a field permeability of not more than 1.0×10^{-5} cm/sec. The overlying vegetative support layer shall exhibit a thickness of 18 inches. See **Drawing E2** for final contours and **Drawing EC2** for final cover cross-section and details.

8.1.2 Construction Requirements

Final cap installation shall conform to the approved plans (see accompanying plan set), inclusive of the approved Sedimentation and Erosion Control Plan (see **Section 6.7** and **Appendix 8**). The CQA plan must be followed (see **Section 6.0**) and all CQA documentation must be submitted to the Division. Post-settlement surface slopes must not be flatter than 5% (on the upper cap) and not steeper than 25% (on the side slopes). Per the **2006 C&D Rules**, a gas venting system is required for the cap. A passive venting system will be specified, which will consist of a perforated pipe in crushed stone-filled trench – installed just below the final cap soil barrier layer – with a tentative minimum vent spacing of three vents per acre. **Drawing EC2** shows the gas vent system details.

8.1.3 Alternative Cap Design

The **2006 C&D Rules** make a provision for an alternative cap design, to be used in the event that the permeability requirements for the compacted soil barrier layer cannot be met. Laboratory testing indicates that on-site soils are available that will meet the required field permeability of not more than 1.0×10^{-5} cm/sec (**Volume 2, Section 10.0**). Tentative final closure plans have assumed that on-site soils will be used for the compacted barrier layer – an alternative cap designs consisting of a 40-mil LDPE or HDPE barrier, overlain by a single-bonded geonet drainage layer and 24 inches of vegetative support soil is under consideration. Both final cap profiles are shown on **Drawing EC2**.

8.1.4 Division Notifications

The Operator shall notify the Division prior to beginning closure of any final closure activities. The Operator shall place documentation in the Operating Record pertaining to the closure, including the CQA requirements and location and date of cover placement.

8.1.5 Required Closure Schedule

The Operator shall close the landfill in increments as various areas are brought to final grade. The final cap shall be placed on such areas subject to the following:

- No later than 30 days following last receipt of waste;
- No late that 30 days following the date that an area of 10 acres or greater is within 15 feet of final grades;
- No later than one year following the most recent receipt of waste if there is remaining capacity.

Final closure activities **shall be completed within 180 days** following commencement of the closure, unless the Division grants extensions. Upon completion of closure activities for each area (or unit) the Owner shall notify the Division in writing with a **certification by the Engineer** that the closure has been completed in accordance with the approved closure plan and that said documentation has been placed in the operating record.

8.1.6 Recordation

The Owner shall record on the title deep to the subject property that a CDLF has been operated on the property and file said documentation with the Register of Deeds. Said recordation shall include a notation that the future use of the property is restricted under the provision of the approved closure plan.

8.2 Closure Plan

The following is a tentative closure plan for CDLF Phase 2, based on the prescribed operational sequence and anticipated conditions at the time of closure.

8.2.1 Final Cap Installation

8.2.1.1 Final Elevations – Final elevation of the landfill shall not exceed those depicted on Drawing E2 when it is closed, subject to approval of this closure plan. The elevations shown include the final cover. A periodic topographic survey shall be performed to verify elevations.

8.2.1.2 Final Slope Ratios – All upper surfaces shall have at least a 5 percent slope, but not greater than a 10 percent slope. The cover shall be graded to promote positive drainage. Side slope ratios shall not exceed 3H:1V. A periodic topographic survey shall be performed to verify slope ratios.

8.2.1.3 Final Cover Section – The terms "final cap" and "final cover" are used interchangeably. The final cover may subscribe to the following minimum regulatory requirement for C&D landfills (an alternative cover describes in **Section 8.1.3** is also under consideration):

- An 18-inch thick compacted soil barrier layer (CSB) with a hydraulic conductivity not exceeding 1 x 10^{-5} cm/sec, overlain by
- An 18-inch thick "topsoil" or vegetated surface layer (VSL).

8.2.1.4 Final Cover Installation – All soils shall be graded to provide positive drainage away from the landfill area and compacted to meet applicable permeability requirements. Suitable materials for final cover soil shall meet the requirements defined above. Care shall be taken to exclude rocks and debris that would hinder compaction efforts. The surface will then be seeded in order to establish a good stand of vegetation.

Test Pad – Whereas the lab data indicate that the required permeability is attainable, the ability to compact the materials in the field to achieve the required strength and permeability values shall be verified with a field trial involving a test pad, to be sampled with drive tubes and laboratory density and/or permeability testing, prior to full-scale construction. The materials, equipment, and testing procedures should be representative of the anticipated actual final cover construction. The test pad may be strategically located such that the test pad may be incorporated into the final cover.

Compacted Soil Barrier – Also known as the "infiltration layer." Materials shall be blended to a uniform consistency and placed in two loose lifts no thicker than 12 inches and compacted by tamping, rolling, or other suitable method – the targeted final thickness is 18 inches minimum. A thicker compacted barrier is acceptable. The cover shall be constructed in sufficiently small areas that can be completed in a single day (to avoid desiccation, erosion, or other damage), but large enough to allow ample time for testing without hindering production. The Contractor shall take care not to over-roll the cover such that the underlying waste materials would pump or rut, causing the overlying soil layers to crack – adequate subgrade compaction within the upper 36 inches of waste materials and/or the intermediate cover soil underlying the final cover is critical. All final cover soils shall be thoroughly compacted through the full depth to achieve the required maximum permeability required by Division regulations of 1.0 x 10^{-5} cm/sec, based on site-specific test criteria (see below). Compaction moisture control is essential for achieving adequate strength and permeability.

Vegetated Surface Layer – Also known as the "erosion layer." Materials shall be blended and placed in two loose lifts no thicker than 12 inches and compacted by tamping, rolling, or other suitable method – the targeted final layer thickness is 18 inches minimum per the design criteria. A thicker soil layer is acceptable. A relatively high organic content is also desirable. The incorporation of decayed wood mulch or other organic admixtures (WWTP sludge, with advance permission from the Division) is encouraged to provide nutrient and enhanced field capacity. These surface materials are not subject to a permeability requirement, thus no testing will be specified. Care should be taken to compact the materials sufficiently to promote stability and minimize erosion susceptibility, but not to over-compact the materials such that vegetation would be hindered. Following placement and inspection of the surface layer, seed bed preparation, seeding and mulching should follow immediately. The work should be scheduled to optimize weather conditions, if possible.

Inspection and Testing – Soils for the barrier layer are subject to the testing schedule outlined in the Construction Quality Assurance plan (see **Section 7.0**). The proposed testing program includes a minimum of one permeability test per lift per acre and four nuclear density gauge tests per lift per acre, to verify compaction of the compacted barrier layer. The moisture-density-permeability relationship of the materials has been established by the laboratory testing (discussed elsewhere in this report). The Contractor shall proof roll final cover subgrade materials (i.e., intermediate cover), which consist of essentially the same materials as the compacted barrier layer (without the permeability requirements), to assure that these materials will support the final cover.

8.2.1.5 Final Cover Vegetation – Seedbed preparation, seeding, and mulching shall be performed accordance the specifications provided in the Construction Plans (see **Drawing EC2**), unless approved otherwise (in advance) by the Engineer). In areas to be seeded, fertilizer and lime typically should be distributed uniformly at a rate of 1,000 pounds per acre for fertilizer and 2,000 pounds per acre for lime, and incorporated into the soil to a depth of at least 3 inches by disking and harrowing. The incorporation of the fertilizer and lime may be a part of the cover placement operation specified above. Distribution by means of an approved seed drill or hydro seeder equipped to sow seed and distribute lime and fertilizer at the same time will be acceptable. Please note that the seeding schedule varies by season.

All vegetated surfaces shall be mulched with wheat straw and a bituminous tack. Areas identified as prone to erosion mat be secured with curled-wood excelsior, installed and pinned in accordance with the manufacturer's recommendations. Certain perimeter

channels may require excelsior or turf-reinforcement mat (TRM), as specified in the Channel Schedule (see **Drawings**). Alternative erosion control products may be substituted with the project engineer's prior consent. All rolled erosion control materials should be installed according to the generalized layout and staking plan found in the Construction Plans or the manufacturer's recommendations.

Irrigation for landfill covers is not a typical procedure, but consideration to temporary irrigation may be considered if dry weather conditions prevail during or after the planting. Care should be taken not to over-irrigate in order to prevent erosion. Collected storm water will be suitable for irrigation water. Maintenance of the final cover vegetation, described in the **Post-Closure Plan** (see below), is critical to the overall performance of the landfill cover system.

8.2.1.6 Documentation – The Owner shall complete an "as-built" survey to depict final elevations and to document any problems, amendments or deviations from the Construction Plan drawings. Records of all testing, including maps with test locations, shall be prepared by the third-party CQA testing firm. All materials pertaining to the closure shall be placed in the Operational Record for the facility. Whereas the closure will be incremental, special attention shall be given to keeping the closure records separate from the normal operational records.

8.2.2 Maximum Area/Volume Subject to Closure

The largest anticipated area that will require final closure at any one time, that is, the maximum area subject to financial assurance requirements under the 2006 C&D rules, is **19 acres**. Intermediate cover shall be used on areas that have achieved final elevations until the final cover is installed – typically this will occur in 2 to 3 acre increments – but it will be more cost effective to close the landfill in larger sections. Based on the volumetric analysis (**Appendix 7**), the planned volume of Phase 2 is 4.2M cubic yards. Please note that some of Phase 1 shall be closed under **Solid Waste Rule 0.510**.

8.2.3 Closure Schedule

Refer to the requirements outlined in **Section 9.1.5** (above).

8.2.4 Closure Cost Estimate

The following cost estimate is considered suitable for the **Financial Assurance** requirements (see **Section 9.0**). The cost analysis includes the alternative final cover profile discussed in Section

TABLE 8A
ESTIMATED FINAL CLOSURE COSTS FOR PHASE 2 (in 2008 dollars)

1) Regulatory Minimum Cover with Compacted Soil Barrier

Topsoil (18" over 43 ac)	104,060 c.y.	@	$3.25 / cubic yard	$338,195
Compacted Soil Barrier*	119,670 c.y.	@	$8 / cubic yard	$1,196,700
Seed and Mulch	43 acres	@	$1,300 per acre	$ 55,900
Storm Water Piping**	2500 LF	@	$10.00 / LF	$ 25,000
CQA	43 acres	@	$4,500 per acre	$ 193,500
Total Construction Cost (if contracted out)				**$1,809,295**

2) Alternative Final Cover with Flexible Membrane Barrier

Topsoil (24" over 43 ac)	138,750 c.y.	@	$3.25 / cubic yard	$450,938
Single-bond Geocomposite Drainage Layer	1,873,080 s.f.	@	$0.45 / s.f.	$ 842,886
40-mil HDPE flexible Membrane	1,873,080 s.f.	@	$0.35 / s.f.	$ 655,578
Seed and Mulch	43 acres	@	$1,300 per acre	$ 55,900
Storm Water Piping**	2500 LF	@	$10.00 / LF	$ 25,000
CQA	43 acres	@	$2,500 per acre	$ 107,500
Total Construction Cost (if contracted out)				**$2,137,802**

3) Alternative Final Cover with Flexible Membrane Barrier (Largest Open Area)

Topsoil (24" over 19 ac)	61,306.7 c.y.	@	$3.25 / cubic yard	$199,247
Single-bond Geocomposite Drainage Layer	827,640 s.f.	@	$0.45 / s.f.	$ 372,438
40-mil HDPE flexible Membrane	827,640 s.f.	@	$0.35 / s.f.	$ 289,674
Seed and Mulch	19 acres	@	$1,300 per acre	$ 24,700
Storm Water Piping**	2500 LF	@	$10.00 / LF	$ 25,000
CQA	19 acres	@	$2,500 per acre	$ 47,500
Bonded Construction Cost (if contracted out)				**$958,559**

*Maximum permeability of 1 x 10^{-5} cm/sec, use a shrinkage factor of 15%.

**Preliminary estimates, subject to verification.

WCA Material Recovery, LLC, plans to complete the closure work using in-house forces. The costs shown above are for a third-party contractor to complete the work. Please note that the final closure work will be performed incrementally, thus spreading out the costs over the life of the project, thus the Financial Assurance calculations (**Section 9.0**) are based on a maximum open area of 19 acres at any given time (Part 3 above). Likewise, the cost for 19 acres of the Regulatory Minimum Cover is $813,405.

8.3 Post-Closure Plan

8.3.1 Monitoring and Maintenance

8.3.1.1 Term of Post-Closure Care – The facility shall conduct post-closure care for a minimum of 30 years after final closure of the landfill, unless justification is provided for a reduced post-closure care period. The post-closure care period may be extended by the Division if necessary to protect human health and the environment.

8.3.1.2 Maintenance of Closure Systems – Inspections of the final cover systems and sediment and erosion control (S&EC) measures shall be conducted quarterly. Maintenance will be provided during post-closure care as needed to protect the integrity and effectiveness of the final cover. The cover will be repaired as necessary to correct the effects of settlement, subsidence, erosion, or other events. Refer to the **Post Closure Monitoring and Maintenance Schedule** (see **Table 8B**).

8.3.1.3 Landfill Gas Monitoring – The presence of gas is not anticipated during the post-closure period, due to the inert nature of the wastes. Gas monitoring will be conducted for the first five years following the closure of Phase 1A via sampling the head-space in monitoring wells and bar-hole punch tests with an Organic Vapor Analyzer (OVA), or similar equipment, during routine sampling events and continual monitoring in on-site buildings via a gas detection meter. After five years, if no explosive gas is detected, the landfill gas monitoring will be discontinued. If gas is detected at the sampling points at any time, the Division will be notified and an evaluation of protective measures will be performed.

8.3.1.4 Ground Water Monitoring – Groundwater monitoring will be conducted under the current version of the approved Sampling and Analysis Plan (see **Section 10.2**). This plan will be reviewed periodically and may change in the future. Approximately one year prior to the landfill reaching permitted capacity, the facility will submit post-closure monitoring and maintenance schedules, specific to the ground water monitoring. Procedures, methods, and frequencies will be included in this plan. This future plan, and all subsequent amendments, will be incorporated by reference to this document.

8.3.1.5 Record Keeping – During the post closure period, maintenance and inspection records, i.e., a **Post Closure Record**, shall be kept as a continuation of the **Operating Record** that was kept during the operational period. The Post Closure Record shall include future inspection and engineering reports, as well as documentation of all routine and non-routine maintenance and/or amendments. The Post Closure Record shall include the ground water and gas monitoring records collected for the facility.

8.3.1.6 Certification of Completion – At the end of the post-closure care period the facility manager shall contact the Division to schedule an inspection. The facility manager shall make the Post Closure Record available for inspection. A certification that the post-closure plan has been completed, signed by a North Carolina registered professional engineer, shall be placed in the operating/post closure record. The Owner/Operator shall maintain these records indefinitely.